

### REPLACEMENT SPECIFICATION PARAGRAPHS

Please enter the following replacement specification paragraphs.

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A1 The wide-spread growth of the Internet has spurred numerous electronic communities, each providing numerous discussion forums dedicated to nearly any conceivable topic for discussion. The participants in a particular discussion may be geographically dispersed with worldwide representation or may be primarily localized, depending on the topic or distribution of the forum. For example, a mailing list devoted to planning for city parks in New York City may be only of interest to people having strong ties to the city or region, while a message board devoted to a particular programming language may have participants spanning the globe.

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A2 **Community** – a vehicle supporting one or more electronic discussions, such as a message board, mailing list, or Usenet newsgroup.

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A3 cm.t Analysis subsystem 34 performs analysis of the information collected by the message collection subsystem 12 and objective data collection subsystem 32, and the categorization and opinion information determined by message categorization subsystem 14 and opinion rating subsystem 16, respectively. Analysis subsystem 34 determines the existence of any correlation between discussion forum postings and market activity for each topic that the system is currently tracking. The results of the analysis are stored in the analysis database 26 in central data store 20 for eventual presentation to end-users 9. Analysis subsystem 34 examines the internal behavior of communities and correlates individual and group behavior to the world external to the

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communities using a variety of analysis techniques with a variety of goals. Analysis subsystem 34 identifies and categorizes actors by measuring the community's response to their postings; measures and categorizes the community's mood; correlates actors' behavior and the communities' moods with objective data sources; and forecasts the markets' behavior, with confidence estimates in various timeframes. Identifying and tracking both the actors and the community mood is important, because the effect of an actor's message depends in part on the mood of the community. For example, an already-nervous community may turn very negative if a buy signaler or other negative actor posts a message, while the same message from the same person may have little effect on a community in a positive mood. The following sections describe the patterns sought in the analysis and describes how the community behaves after postings by each local pseudonym associated with the patterns.

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Two of the more interesting classifications made by analysis subsystem 34 identify buzz accelerators and buzz decelerators. Because of the correlation identified in some markets between the level of discussion in a community and the objective, real-world events, identification of buzz accelerators and decelerators can be used to predict the probable outcome of real-world events. For example, if a local pseudonym were identified as a buzz accelerator for electronic discussion forums related to the stock market, whenever that local pseudonym posts a message to such a forum, one would expect a rise in the discussion level, and the correlating drop in stock prices. Related, but not synonymous, classes of actors are buy signalers and sell signalers. Such actors tend to post messages at a time preceding a rising or falling market for that topic. In contrast to buzz accelerators or decelerators, buy and sell signalers do not necessarily tend to reflect or precede rising levels of electronic discussion on the forums.

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The final three classes of local pseudonyms are manipulators, provokers and connectors. As noted in the definition sections, a manipulator is a local pseudonym with little posting history except as manipulators, whose combined postings on one topic elevate the buzz level in the absence of external confirming events. Such actors may be attempting to obscure analysis or to sway the markets being analyzed. As such, identifying and tracking manipulators is important for ensuring validity of the results output by analysis subsystem 34. Provokers are local pseudonyms that tend to start longer discussion threads, which may contribute to a community's overall discussion level, but is not indicative of a rise in discussion level for the community. Again, identification and tracking of provokers allows better results in the analysis of electronic discussion information. Finally, a connector is a local pseudonym that posts on a high number of topics or a high number of communities.

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As with any high-frequency, high-volume data mining challenge, the number of potential variables is enormous and the applicable techniques are many. To simplify this problem, the system and method of the present invention reduces the data sets as much as possible before analysis. Accordingly, on the assumption that there are a very small number of opinion leaders relative to participants, the vast majority of participants whose postings did not occur near objective data inflection points, i.e., sharp changes in the objective data, are eliminated. This greatly reduces the amount of data that is further analyzed by the system and method of the present invention. The period of time over which inflection points are identified has a great impact on which patterns can be identified and usefulness of the resulting data. For example, stock price movement and other markets are known to have fractal patterns, so they have

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different inflection points depending on the time frame chosen. Accordingly, different inflection points will be identified if the period is weekly, monthly, or yearly. The more volatile a market is, the more inflection points can be found.

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Cluster analysis allows discovery of groups of local pseudonyms that "travel in the same circles." For example, there may be a group of 20 local pseudonyms that tend to participate in discussions on five topics. This cluster of shared interests is a means of automatically discovering that there is some kind of relationship among the five topics. In the financial market, it implies that people who are interested in any one of the five companies are likely to find the other four interesting. Presenting these as recommendations is a form of *collaborative filtering*, because it helps the user select a few new topics of interest out of thousands of possibilities. The most significant aspect of this analysis is that the computer system needs no knowledge of *why* the topics are related; the system can therefore discover new relationships.

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Report presentation subsystem 36 extracts the results of the analysis performed by analysis subsystem 34 for presentation to end-users 9. In a preferred embodiment, report generation subsystem 36 and presents it to end-users via a Web-based user interface. In this embodiment, the reports are published using a variety of formats, such as, e.g., PDF, HTML, and commercially available spreadsheets or word processors, and the like. End-users 9 may use any suitable Web browser to view and receive the reports generated by report generation subsystem 36. Examples of such Web browsers are available from Netscape, Microsoft, and America Online. In an alternative embodiment, report generation subsystem 36 presents the results in written reports that may be printed and distributed.